

NAMES \_\_\_\_\_

## CHILD GENETIC VARIATION PROJECT

Why are even closely related siblings different both in genotype and phenotype? They differ because the variety of traits in a human population is very large and reproduction continually creates new combinations of traits.

What traits would your make-believe child have if both you and a classmate (your make-believe spouse) are heterozygous for each of the traits listed below? Illustrate how inherited traits are determined by chance with the following simulation:

### PROCEDURE

1. Pair up into make-believe sets of parents.
2. Both parents, you and your partner, record your names on the data sheet.
3. On the data sheet, list the genotypes and phenotypes for each trait you determine
4. To determine the genotype for each trait, you will spin a spinner.
  - 1 and 3 indicate the child will be heterozygous for the trait
  - 2 indicates that the child will be homozygous dominant for the trait
  - 4 indicates that the child will be homozygous recessive for the trait
5. Spin for the sex
  - If you spin a 1 or 3, the child is a boy
  - If you spin a 2 or 4, the child is a girl
6. Name your child and record it below
7. Spin for the face shape and then continue down the chart/through the packet, filling in the genotypes and corresponding phenotypes. Follow the directions carefully for the skin color and eye color (they are more complicated!).
8. Construct a picture of your child using the determined phenotypes (draw your child as a toddler)
9. Either write a story about the life of your child OR create a collage of pictures that illustrates the life of your child. No matter which you pick (story or collage), it must contain the child's background, their interests, and goals you have for them. You should have at least 10 sentences/labeled pictures, depending on which option you pick.

Note: You only need to turn in ONE data sheet, ONE picture, and ONE story or collage per group.

Wife and Mother: \_\_\_\_\_

Husband and Father: \_\_\_\_\_

Child's Name: \_\_\_\_\_

DATA SHEET ON BACK

NAMES \_\_\_\_\_

## DATA SHEET

TRAIT	CHILD GENOTYPE	CHILD PHENOTYPE
SEX		
FACE SHAPE		
CHIN SHAPE I		
CHIN SHAPE II		
CLEFT CHIN		
SKIN COLOR		
HAIR TYPE		
WIDOW'S PEAK		
EYEBROWS I		
EYEBROWS II		
COLOR OF EYEBROWS		
EYES- DISTANCE APART		
EYES-SIZE		
EYES-SHAPE		
EYE SLANTEDNESS		
EYELASHES		
EYE COLOR		
MOUTH-SIZE		
LIPS		
PROTRUDING LOWER LIP		
DIMPLES		
NOSE SIZE		
NOSE SHAPE		
NOSTRIL SHAPE		
EARLOBE ATTACHMENT		
FRECKLES ON CHEEKS		